

Center for Cooperative
Aquaculture Research
Hancock County
Franklin, Maine
A-924-71-B-M

Departmental
Findings of Fact and Order
Air Emission License
Amendment #1

After review of the air emissions license application, staff investigation reports and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 M.R.S.A., Section 344 and Section 590, the Department finds the following facts:

I. REGISTRATION

A. Introduction

The Center for Cooperative Aquaculture Research (CCAR) of Franklin, Maine was issued Air Emission License A 924-71-A-N permitting the operation of emission sources associated with their Aquaculture Research facility on October 27, 2005.

Recent inspections revealed one unlicensed boiler that should have been included in CCAR's initial license. CCAR has requested that this boiler be added to the license. CCAR has also requested that the license language be updated to reflect the use of #2 fuel oil which meets the criteria in ASTM D396, and remove the 0.35% sulfur limit.

B. Emission Equipment

The following equipment is addressed in this air emission license:

Fuel Burning Equipment

<u>Equipment</u>	<u>Maximum Capacity (MMBtu/hr)</u>	<u>Maximum Firing Rate (gal/hr)</u>	<u>Fuel Type</u>	<u>Stack #</u>
Boiler #1	1.50	10.8	#2 Fuel Oil	1
Boiler #2	1.50	10.8	#2 Fuel Oil	1
Boiler #3	1.80	13.0	#2 Fuel Oil	1

Note – new information is in **Bold**

Electrical Generation Equipment

<u>Equipment</u>	<u>Maximum Capacity (MMBtu/hr)</u>	<u>Firing Rate (gal/hr)</u>	<u>Fuel Type, % sulfur</u>	<u>Stack #</u>
Back-up Generator #1	2.20	15.8	#2 Fuel Oil	2
Back-up Generator #2	2.20	15.8	#2 Fuel Oil	2
Back-up Generator #3	8.05	58.9	Diesel Fuel @ 0.05%	3

C. Application Classification

This amendment will increase emissions by less than 4 ton/year for each single pollutant and less than 8 ton/year for all pollutants combined. Therefore, this modification is determined to be a minor revision and has been processed as such.

II. BEST PRACTICAL TREATMENT (BPT)

A. Introduction

In order to receive a license the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in Chapter 100 of the Department regulations. Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas.

BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in Chapter 100 of the Department's regulations. BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

B. Boilers #1, #2 and #3

Boiler #1, #2 and #3 have a rated maximum capacity of 1.5, 1.5 and 1.8 MMBtu/hr respectively, and were installed in 2005. They are therefore **not** subject to the New Source Performance Standards (NSPS) Subpart Dc for steam generating units greater than 10 MMBtu/hr manufactured after June 9, 1989.

A summary of the BACT analysis for Boilers #1, #2, and #3 is the following:

1. **The SO₂ emission limits are based on the firing of fuel which meets the criteria in ASTM D396 for #2 fuel oil.**
2. The PM limits are derived from the BACT emission factor of 0.08 lb PM/MMBtu. The PM₁₀ limits are derived from the PM limits.
3. NO_x, CO, and VOC emission limits are based upon AP-42 data dated 9/98.
4. Visible emissions from the boilers shall not exceed 20% opacity on a six (6) minute block average, except for no more than one (1), six (6) minute block average in a continuous 3-hour period.

C. Back-up Generators #1 and #2

Back-up generators #1 and #2 are only to be operated for maintenance purposes and for situations arising from sudden and reasonably unforeseeable events beyond the control of the source. Back-up generators are not to be used for prime power when reliable offsite power is available.

Back-up Generators #1 and #2 currently share a fuel tank with Boilers #1 and #2. The installation of a new fuel tank for these generators or the installation of approximately 200 feet of piping to tie in to the fuel tank for Back-up Generator #3 is not economically feasible. **Therefore, BACT for Back-up Generators #1 and #2 shall be the use of #2 fuel oil which meets the criteria in ASTM D396.**

A summary of the BACT analysis for Back-up Generators #1 and #2 is the following:

1. Back-up generators #1 and #2 shall each be limited to 500 hr/yr of operation based on a 12 month rolling total. Compliance shall be demonstrated by an hour meter and a written log of all generator operating hours.
2. The PM limits are derived from the BACT emission factor of 0.12 lb PM/MMBtu. The PM₁₀ limits are derived from the PM limits.
3. NO_x, CO, and VOC emission limits are based upon data supplied by the manufacturer.
4. Visible emissions from the stack shared by back-up generators #1 and #2 shall not exceed 30% opacity on a six (6) minute block average, except for no more than three (3), six (6) minute block averages in a continuous 3-hour period.

D. Fuel Use Restrictions and Licensed Emissions

1. **Boilers #1, #2, and #3 shall be limited to firing #2 fuel oil which meets the criteria in ASTM D396.** Emissions shall be based on continuous operation.
2. Back-up generators #1 and #2 shall each be limited to 500 hours of operation on a 12 month rolling total. **Back-up generators #1 and #2 shall fire only #2 fuel oil which meets the criteria in ASTM D396.**
3. Back-up generator #3 shall be limited to 500 hours of operation on a 12 month rolling total. Back-up generator #3 shall fire only diesel fuel with a sulfur content not to exceed 0.05%.
4. CCAR shall be restricted to the following annual emissions, based on a 12 month rolling total:

Total Licensed Annual Emission for the Facility

Tons/year

(used to calculate the annual license fee)

	PM	PM₁₀	SO₂	NO_x	CO	VOC
Boilers #1, #2, and #3	1.68	1.68	7.41	3.00	0.75	0.08
Back-up Generator #1	0.07	0.07	0.19	1.62	0.92	0.32
Back-up Generator #2	0.07	0.07	0.19	1.62	0.92	0.32
Back-up Generator #3	0.24	0.24	0.10	4.67	1.08	0.17
Total	2.06	2.06	7.89	10.91	3.67	0.89

III.AMBIENT AIR QUALITY ANALYSIS

According to the Maine Regulations Chapter 115, the level of air quality analyses required for a minor new source shall be determined on a case-by case basis. Based on the information available in the file, and the similarity to existing sources, Maine Ambient Air Quality Standards (MAAQS) will not be violated by this source.

ORDER

The Department hereby grants Air Emission License A-924-71-B-M subject to the following conditions.

Severability. The invalidity or unenforceability of any provision, or part thereof, of this License shall not affect the remainder of the provision or any other provisions. This License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

SPECIFIC CONDITIONS

The following conditions shall replace Specific Conditions 16 and 17 in Air Emission License A-924-71-A-N.

(16) Boilers #1, #2 and #3

- A. Boilers #1, #2, and #3 shall fire **#2 fuel oil which meets the criteria in ASTM D396**. Compliance shall be demonstrated by fuel records from the supplier documenting **the type of fuel received**. [MEDEP Chapter 115, BACT]
- B. Emissions shall not exceed the following for boilers #1, #2, and #3 [MEDEP Chapter 115, BACT]:

Emission Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boilers #1 and #2 (each)	0.12	0.12	0.53	0.22	0.05	0.01
Boiler #3	0.14	0.14	0.63	0.26	0.06	0.01

- C. Visible emissions from Boilers #1, #2, and #3 shall each not exceed 20% opacity on a six (6) minute block average, except for no more than one (1), six (6) minute block average in a continuous 3-hour period. [MEDEP Chapter 101]

(17) Back-up Generators #1, #2, and #3

- A. CCAR shall limit the back-up generators to 500 hr/yr of operation each (based on a 12 month rolling total). An hour meter shall be maintained and operated for compliance purposes. [MEDEP Chapter 115, BACT]
- B. The back-up generators shall only be operated for maintenance purposes and for situations arising from sudden and reasonably unforeseeable events beyond the control of the source. The back-up generators shall not to be used for prime power when reliable offsite power is available. A log shall be maintained documenting the date, time, and reason for operation. [MEDEP Chapter 115, BACT]
- C. Back-up generators #1 and #2 shall fire **#2 fuel oil which meets the criteria in ASTM D396**. Back-up Generator #3 shall fire only diesel fuel with a sulfur content not to exceed 0.05% by weight. **Compliance for Back-up Generators #1 and #2 shall be based on records from the supplier documenting the type of fuel delivered. Compliance for Back-up Generator #3 shall be based on fuel records from the supplier**

documenting the percent sulfur of the fuel delivered. [MEDEP Chapter 115, BACT]

D. Emissions shall not exceed the following. [MEDEP Chapter 115, Chapter 103, BACT]:

Emission Unit		PM	PM ₁₀	SO ₂	NO _x	CO	VOC
Back-up Generators #1 and #2 (each)	lb/hr	0.27	0.27	0.78	6.47	3.67	1.27
Back-up Generator #3	lb/MMBtu	0.12	-	-	-	-	-
	lb/hr	0.97	0.97	0.42	18.68	4.30	0.68

- E. Visible emissions from the stack shared by back-up generators #1 and #2 shall not exceed 30% opacity on a six (6) minute block average, except for no more than three (3), six (6) minute block averages in a continuous 3-hour period. [MEDEP Chapter 101]
- F. Visible emissions from back-up generator #3 shall not exceed 20% opacity on a six (6) minute block average, except for no more than two (2), six (6) minute block averages in a continuous 3-hour period. [MEDEP Chapter 101]

(18) CCAR shall notify the Department within 48 hours and submit a report to the Department on a quarterly basis if a malfunction or breakdown in any component causes a violation of any emission standard (Title 38 MRSA §605).

DONE AND DATED IN AUGUSTA, MAINE THIS DAY OF 2007.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____
DAVID P. LITTELL, COMMISSIONER

The term of this amendment shall be concurrent with the term of Air Emission License A-924-71-A-N.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 8/10/2005

Date of application acceptance: 8/29/2005

Date filed with the Board of Environmental Protection: _____

This Order prepared by Jonathan Voisine, Bureau of Air Quality.